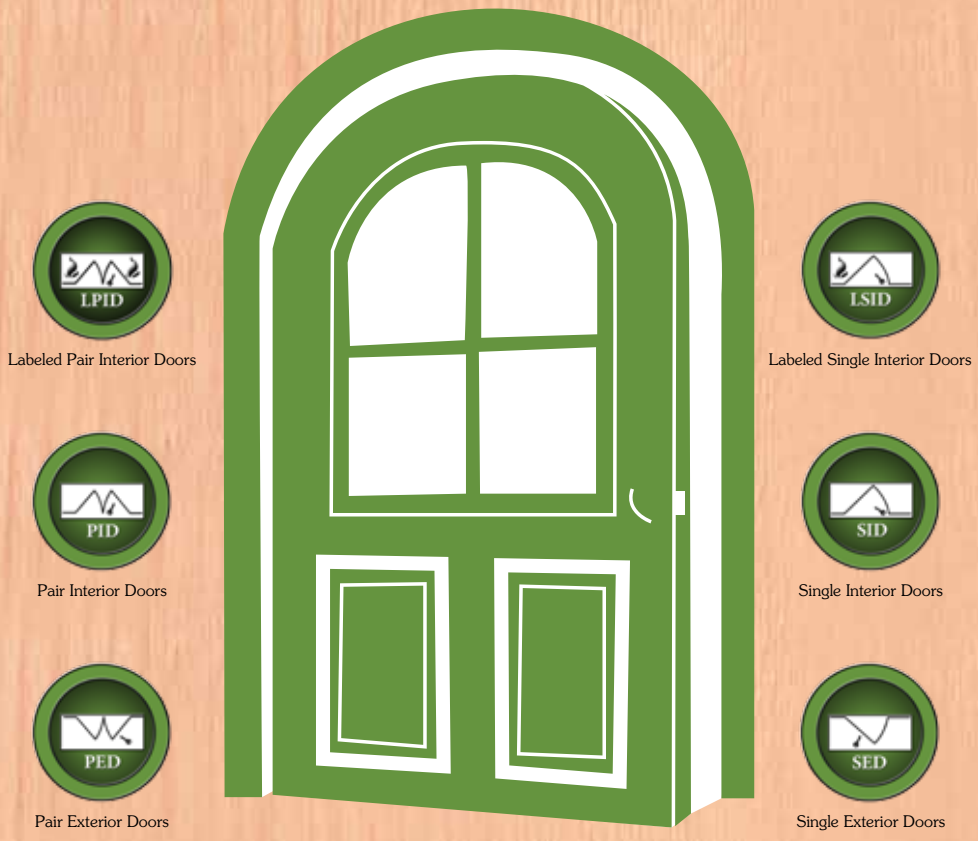
Door Hardware »
SIMPLIFIED

The ABCs of Door Hardware

Application of Door Hardware
Basic Door Hardware
Care of Door Hardware



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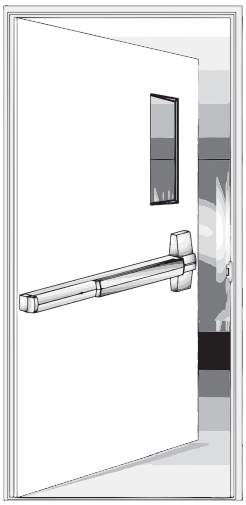
DOOR HARDWARE SIMPLIFIED

Selecting the right door hardware doesn't have to be hard.

Any idea why it's called "HARDWARE"? You guessed it: because it can be hard unless you know the basics. This is what "Door Hardware Simplified" is all about.

Door Hardware Simplified has been designed for individuals who would like to learn more about basic door hardware and its application, the selection process of each piece of door hardware — including basic helpful hints regarding the care — and preventative maintenance for each piece of hardware.



The above pictured door has a rim exit device on it; what's not illustrated is how the door is hanging or what's holding the door upright and allowing it to open and close, or if the door closes automatically after it is opened and if there is anything that's going to stop the door once it's open. Is the bottom of the door protected from someone kicking it, or can any type of cleaning equipment scar or damage the surface of the door? Not to mention that if this door is an outside door, is there any type of protection against wind, rain or other type of exterior elements from coming inside?

Sounds like a lot, doesn't it? Not to worry; with "Door Hardware Simplified," all of these important questions will be answered in a very easy-to-read format with lots of examples and pictures!

Door Hardware Simplified is presented in four basic sections: each section is designed to answer the most frequently asked questions, giving examples, formulas and solutions!

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1. GENERAL INFORMATION

1A. HANDING OF DOORS

The handing of a door refers to the direction the door swings or moves. Strictly speaking, a door is right or left-hand, unless it is a double-acting door, which is able to swing freely in both directions. It will be necessary to use the term "Reverse Bevel" for those doors opening outward away from the room it serves. This will prevent any confusion as to which side is the security side (side the cylinder will be on). When two doors are hung in one frame, it becomes a pair, or double-door assembly. It will be necessary to indicate which of the two will be the active door (the one that will receive a lock or exit device).

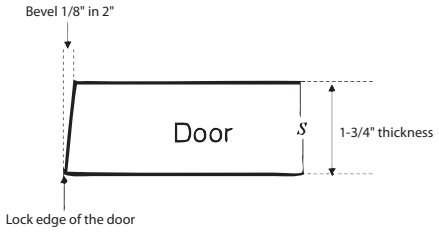
RULES FOR DETERMINING THE HAND

1. The hand of a door is always determined from the outside, or the security side of the door (cylinder side).
2. The outside of an exterior door would be the street or sidewalk side.
3. The outside of an auditorium, office or room door would be the corridor or hall side.
4. The outside of a closet or utility room door would be the room, corridor or hall side.

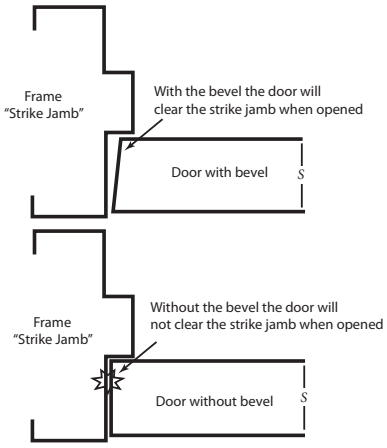
The different door swings and their designations are:

RH	Right-hand
LH	Left-hand
RHR	Right-Hand Reverse bevel
LHR	Left-Hand Reverse bevel
DA	Double Acting
D/E	Double Egress

Bevel is a term that indicates the angle of the lock edge of the door, and is usually standard for doors that are 1-¾ inches thick. The standard bevel is 1/8 inch in 2 inch.



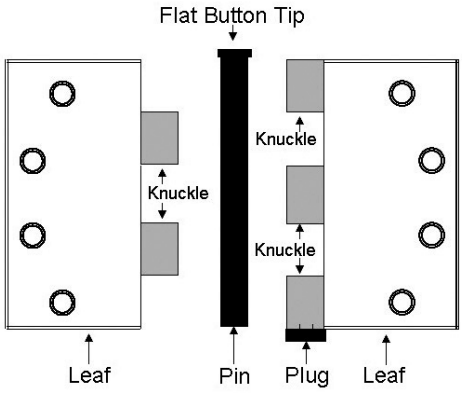
Without a bevel, the door would not be allowed to open without binding and hitting the frame.



2. BASIC DOORWARE

2A. HINGES

A hinge is made up of two leaves that are joined together by a pin: the pin is inserted through the knuckles of each leaf, thus allowing the hinge to open and close. By installing one leaf to the door and one leaf to the jamb (or frame), the door is hinged in the opening and allowed to open and close.



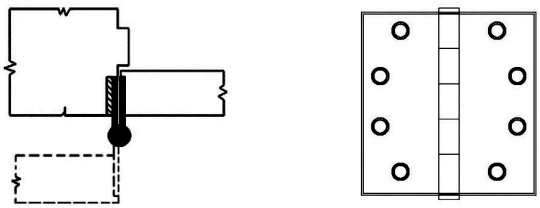
Pictured is a flat button tip, 5 knuckle plain bearing mortise hinge

There are four different types of hinges: describing the type of hinge is determined by its application on the door.
Full mortised hinge: both leaves are mortised.
Full surface hinge: both leaves are surfaced mounted.
Half mortise hinge: one leaf is mortised into the door's edge.
Half surface hinge: one leaf is surfaced mounted on the door.

The following pictures are showing the different types of applications for the different types of hinges. The construction of the door and the frame will determine the type of hinge necessary to hang the door in the opening.

FULL-MORTISE HINGE

Both leaves mortised. One leaf mortised into the door edge, and the other leaf is mortised into a hollow metal-type frame. Only the hinge knuckle is exposed; this application is the most common and protects against someone removing the attachment screws/fasteners and removing the door from the opening.



3. DOORWARE CARE

3A. FINISH

Usage, location and climatic conditions will have a damaging effect on finishes.

Check with the manufacturer for their recommendation on how to care for and protect the finish on their product. Below is only a suggested procedure and does not supersede the manufacturer's recommendations.

Refer to General Information "FINISH" for a detailed listing of the finish designation and their base metal. Shown below are a few of the most common finishes and the necessary precautionary steps to maintain them over a period of time.

Plated finishes, such as 625 (polished chromium plated), 626 (satin chromium plated), and 652 (satin chrome plated/steel base–see 626) over a period of time and depending on usage will begin to wear showing signs of the base metal. If this occurs, re-plating or replacement of the trim should be considered.

Lacquered or clear-coated finishes, such as 605 (bright brass clear coated), 606 (satin brass clear coated), and 612 (satin bronze clear coated) require special attention because after a period of time the lacquer may show signs of scaring, spotting or even peeling.

Care for 605 (bright brass), 606 (satin brass), 611 (polished bronze), 629 (polished stainless steel), and 630 (satin stainless steel) would consist of periodical wiping with a soft, damp cloth.

Care for 613 (oil rubbed bronze) would consist of periodical wiping with a little vegetable oil on a soft cloth (too much oil may leave a build up on the lock and come off on your hand).

Jewelry (such as rings), along with other objects that come in contact with the hardware, can scar the protective coating and start the peeling effect.

Wiping with a soft, damp cloth can maintain a lacquered finish for some time, but eventually one of the two solutions must be considered.

1. Solid brass or bronze trim can be kept in good appearance by stripping the clear protective coating and then continue polishing with a metal polish.

   PROFESSIONAL REFINISHERS SHOULD BE CONSULTED BEFORE THIS PROCESS IS BEGUN.

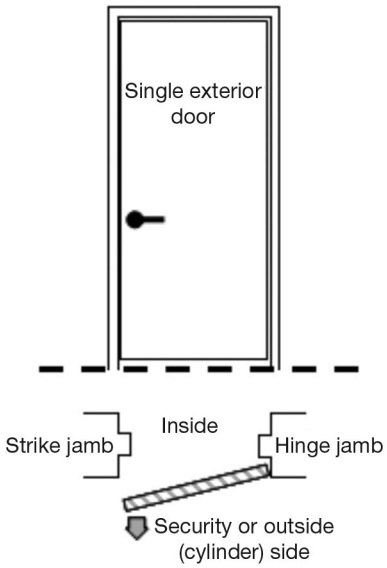
2. Replace with new hardware.

   Door hardware deserves the same attention given to other articles of value.

   Protecting the finish is essential, as any solvents used to clean or remove paint can damage any type of finish.

4A. SINGLE EXTERIOR DOORS (SED)

This application will consist of one door in one frame and it will be located on the perimeter of a building.



When hanging an exterior door with hinges the hinges, will most likely be on the outside: if they are, consideration should be given to select hinges that offer a non-removable pin or a security stud to guard against the pin being removed or from separating the two leaves and gaining access to the building. It is also highly recommended that non-ferrous ball-bearing or anti-friction type hinges be selected, as most likely a closer will be used to automatically close the door.

Exterior storage, mechanical equipment and utility room doors will most likely require a locking device that is always locked (storeroom function), where office entry and private building entrance doors would also require locking but not to be always locked (entry function). Auditorium, public building and school entrance doors would most likely require an exit device that complies with life safety regulations.

All exterior door applications require a closing device that can be adjusted to regulate the speed and power of the closing cycle; consideration in keeping the closer mounted on the inside of the building should always be a priority, as well as selecting a door closer offering a delay feature to accommodate physically challenged individuals while moving through a public building entrance doorway.

Stopping an exterior door always poses a challenge, as many obstacles can prevent the use of a floor or wall type stop. The use of an overhead stop provides the best solution: however, a surface-mounted door closer incorporating a special stop/arm can be selected.

Protection plates are always recommended, especially when there is a door closer installed or where equipment of all types will possibly be moving through or bumping up against the door. Generally, a kick plate is not installed on the outside or pull side of an exterior door; they will be found on the push or inside the door.

Weather stripping and a threshold should be installed to protect the room from exterior elements.

Here is an example of a material list or hardware grouping for one single exterior mechanical equipment room door. This material list is following the procedure as pointed out in the eight simple steps.

What this example illustrates is the recommended layout of identifying the door(s), their location and hand. It is okay to list more than one door if more than one door of the same type and size receive the same hardware items: in that case, you adjust the quantity accordingly.

Show the door's information directly under the door's listing.

1 Single Door	Exterior from Mechanical Equipment Room 3'0" wide x 7'0" high x 1-3/4" thick Metal Door (MD) x Metal Frame (MF)	RHR

Each door to receive:

3 ea. Hinges	Full-mortise, non-ferrous heavy-weight, ball-bearing, NRP
1 ea. Lockset	Storeroom function
1 ea. Closer/stop	Surface-mounted, parallel stop arm
1 ea. Kick plate	8" high x 34" wide
1 ea. Threshold	Type x 36"
1 set. Weather stripping	Type x 17'

Typical Applications

SED-Group-101: Single Exterior Doors From:

- Storage rooms
- Mechanical equipment rooms
- Utility rooms

Operation:

- Self-closing
- Locking: always locked outside, inside lever always free
- Overhead closer with a stop arm
- Gasketed

Recommended Hardware:

3 ea. Full mortise, heavy-weight, ball-bearing, NRP	Hinges
1 ea. Storeroom function, lever trim	Lockset
1 ea. Surface-mounted, parallel stop arm	Closer
1 ea. Threshold	
1 set Weather-stripping	

SED-Group-102: Single Exterior Doors From:

- Auditoriums
- Public building entrances
- School entrances

Operation:

- Self-closing
- Exit device: outside locking lever trim, immediate egress
- Overhead closer
- Overhead stop
- Gasketed

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